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# RECORDS

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## VOLUME I.

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## NOTES ON A JOURNEY FROM HAVERI TO KUMTA,

BY

G. MARSHALL WOODROW.

## NOTES OF A TOUR IN TRAVANCORE, ETC.,

BY

M. A. LAWSON, M.A.

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# NOTES

ON A

# JOURNEY FROM HAVERI TO KUMTA

IN

# MAY 1894.

Haveri is a town 60 miles south of Dharwar on the Harihar Branch of the Southern Maratha Railway. It is on a good road which crosses North Kanara to Kumta on the coast.

Near Haveri the plains of black soil, which occupy the greater part of the Dharwar Collectorate, change gradually into a yellowish loam, producing scanty crops of cotton and millet. With the exception of stunted *Babool* [1] on the headlands of the fields, planted trees only are to be seen. The fences are chiefly of *Euphorbia Tirucalli*, Linn., and *Opuntia nigricans*, Haw., in them *Olax scandens*, Roxb, and *Cadaba indica*, Lamk., occur, and climbing over them at intervals may be seen *Rivea hypocrateriformis*, Chois., *Ipomœa sepiaria*, Koen., *Asparagus racemosus*, Willd., *Vitis setosa*, Wall., *Dæmia extensa*, Br., and other two *Asclepiads*. Groups of *Balanites Roxburghii*, Planch., may be seen, and *Cassia auriculata*, Linn., is common, but at this season herbaceous vegetation is very scanty, being represented only by *Tribulus terrestris*, Linn., *Cleome simplicifolia*, H. f. and T., *Evolvulus alsinoides*, Linn., *Withania somnifera*, Dunal, and *Trichodesma amplexicaule*, Roth. Of *Trichodesma amplexicaule*, Roth. C. B. Clarke remarks, "it is probably a mere form of *T. indicum*, Br." The general aspect of *T. amplexicaule* while growing is very distinct; it is much smaller than *T. indicum*, the anthers are exserted, and have long twisted points; the corolla lobes are also furnished with long twisted points, and, as far as I have observed, there is also in Western India a difference in the distribution of those two species: *T. amplexicaule* occurring in the Southern Maratha country, Bijapur and Scind, but being absent from Poona district which is occupied by *T. indicum*. The road runs due westward 10 miles to the village Adur, where

[1] *Acacia arabica*, Willd.

*Trianthema decandra*, Linn., is found hanging down the side of a bank. The Marking-nut[1] tree and the Cashew-nut[2] tree appear near the village, evidently planted, and "*Mole*"[3] grass is abundant in places with defective drainage. This grass much resembles the "*sabai*" of Northern India, both in general appearance and properties; it is used for making brooms and ropes, and good paper can also be made from it, although the Poona paper manufacturers say it has some knots that are difficult to remove. When this objection has been overcome it will surely become an important source of paper material, as it could be produced in great quantity on water-logged land that is not fit for general cultivation. The roadside trees *Karanj*[4], *Nim*[5], and *Jambool*[6] look more luxuriant here than further east, an evident sign of increasing rainfall. From this point the road turns south-west and a few miles further brings in view the village of Alur, with what appeared in the distance to be a large Cocoanut plantation, but which on closer inspection proved to be a mixture of Cocoanut, Betel-nut, Jack fruit, Betel-leaf, Plantain and other crops that would grow on a wet soil, planted without apparent system; the water in numerous large tanks is only three feet from the surface in May, and the workmen appear worn to skin and bone from fever. *Polygonum barbatum*, Linn. was gathered in ditches in the shade, and *Blumea membranacea*, D.C., with *Hydrocotyle asiatica*, Linn., on the outskirts, and *Hemidesmus indicus*, Br., in ripe fruit on the fences which consisted of *Agave vivipara* and A. *americana* on raised banks, and as an apology for a fence, occasionally, *Jatropha curcas*, Linn. The last three are foreign plants, and this leads to the reflection that foreign plants are very generally used for similar purposes. Here *Cordia Macleodii* H. f. & T., occurs, and a small flowered form of *Carissa carandas*, Linn. begins to appear, and continues many miles towards the coast, occupying places not heavily wooded. Here also begins to appear *Eugenia caryophyllæa*, Wight., which continues at short intervals to within high water mark in the tidal back waters. As it occurs here, the rusty red colour on the back of the leaf is wanting, but there is little doubt about its identity. A few *Ainee*[7] trees also appear here and they occur in increasing numbers till the crest of the Ghauts is reached. Soon after passing Alur, specimens of *Randia uliginosa*, D.C. were gathered; the large white flowers with radiating anthers are specially striking at early dawn; the sweet

[1] *Semecarpus Anacardium*, L.f.
[2] *Anacardium occidentale*, L.
[3] *Gymnothrix alopecuroides*, Nees.
[4] *Pongamia glabra*, Vent.
[5] *Melia azadirachta*, Linn.
[6] *Eugenia jambolana*, Lam.
[7] *Terminalia tomentosa*, Bedd.

perfume and large glossy leaves together with the prolonged flowering season of this plant make it a desirable tree for large gardens or parks. Although, as its name implies, it is a marsh tree, it thrives on well-drained land with a heavy rainfall. Here also, the *Koomba*[1] of the Marathas occurs and continues till near the coast; it was festooned with the dried vines and fruit of *Dioscorea oppositifolia*, Linn. This place is about 5 miles from Sumasgi on the border of North Kanara. The land is high and uncultivated and the jungle sparse; the grass land has a brown loamy soil about 2 feet in depth, and the altitude is about 2,500 feet. Would such land suit *Agave sisilana?* This plant promises to become an important fibre crop, and the earlier that suitable land for it is selected the better. Here also *Bassia*[5] *longifolia*, Linn., is met with and *Ægle marmelos*, Corr. (with a platform built round it as is usual with sacred trees) in company with *Sissum*,[2] *Kursing*,[3] *Heerda*[4], and *Garuga pinnata*, Roxb.; *Biboas* with *Loranthus loniceroides*, Linn., on it, *Rhus parviflora*, Roxb. and *Holarrhena antidysenterica*, Wall. In the tank at Sumasgi, the *Sola* plant, *Æschynomene aspera*, Linn. is to be seen; it has not hitherto been admitted to our local floras, although it is abundant at Hangal, a few miles northward where it is called *Bhend*, and is used as buoys for swimming. The fringed[6] marsh flower also occurs here, its leaves resembling those of a *Nymphæa*, the floating *Jussiæa*, white and red *Nympæas*, are abundant, in company with *Ceratophyllum demersum*, Linn., *Oxalis corniculata*, Linn., *Aponogeton monostachyum*, Linn., *Panicum interruptum*, Willd., and *Hydrilla verticillata*, Casp., the latter as usual very abundant, but *Chara fragilis* was searched for in vain. The latter plant has recently been making itself remarkable; for many years previous to 1887 it was superabundant near Poona; but at that date it disappeared suddenly, and is now as far as is known only to be found in Western India at Rutnagiri and at Bodeli in Guzerat. The grand flowering climber, *Ipomæa campanulata*, Linn. now became abundant and continued many miles towards the coast. Here bamboos are planted on the road-sides, *Pterocarpus indicus*, Willd. is common, and isolated trees of *Cassia Fistula*, Linn. were conspicuous by their yellow blossoms. At this part the road is high, and the view westward to the horizon is a waving sea of tree tops. Near the road are grand specimens of *Schrebera swietenioides*, Roxb., (here called *Mokha*) and *Phyllanthus distichus*, Muell., looking very strange in the twilight with its folded leaves—a

[1] *Careya arborea*, Roxb.
[2] *Stereospermum xylocarpum*, Wight.
[3] *Semecarpus Anacardium*, Lf.
[4] *Dalbergia latifolia*, Roxb.
[5] *Terminalia Chebula*, Retz.
[6] *Limnanthemum indicum*, Thw.

ghost-like tree. A few miles further westwards is Yacombi, 47 miles from Kumta, with a forest guard, a dharmsalla, and a district bungalow in the midst of heavy forest. In a small clearing by a tank, is a splendid specimen of *Ficus mysorensis*, Heyne.; in the tank the yellow flowered *Utricularia stellaris*, L.f. abounds, as do *Pistia stratioides*, Linn., and *Nelumbium speciosum*, Willd; the mouth of a drain was occupied by a colony of gregarious spiders making a net of their long legs, and it was amusing to see the spiders' net break up and rush into the drain on being disturbed. *Mimosa sensitiva* first appeared here as a road-side weed, and increased greatly in quantity towards the end of the journey. The fences are generally made of *Adhatoda vasica*, Nees.; but in some instances the common rose, named Edward, is used and it appears to grow with great vigour without special care. *Trichosanthes palmata*, Roxb. and *Entada scandens*, Benth. are conspicuous climbers, the latter growing up to the tops of high trees, then hanging down to the ground like an elegant green curtain. *Gensing mara*,[1] a large Bignoniaceous tree, was in ripe fruit on the banks of the tank, and, near by, *Ficus gibbosa*, Blume was abundant. In published descriptions of this small tree, no mention is made of the glandular punctures, irregularly disposed between each pair of primary veins; those punctures are of very constant occurrence in Western India and appear on the youngest leaves, increasing in size with the development of the leaf, but they are not observable on dried specimens; probably those marks are due to insect agency, but I have not been able to prove this. The large epiphytal fern, *Drynaria quercifolia*, Linn., begins to appear here and increases in numbers towards the coast, and large trees of *Vitex altissima*, L. f. and *Vitex alata*, Heyne are abundant. Here also *Mallotus philippinensis*, Muell., occurs, and several species of small leaved *Ficus* are of such great height that it is difficult to identify or get specimens of them *Vitis discolor*, Dalz. is plentiful in company with *Hemidesmus indicus*, Br. (here called *Dude balli*); which is collected for the market. *Getonia floribunda*, Roxb., *Clematis hedysarifolia*, D.C., and *Cæsalpinia mimosoides*, Lam., and *Chikakaie*,[2] the soap pod, are abundant. *Leea sambucina*, Willd. is one of the commonest roadside plants from this place down to the coast, and *Hoya retusa*, Dalz. hangs in dense masses from the trees. Although all this part of the forest is very heavy, there is great variation in the size of the trees in different parts; in one of the

[1] *Stereospermum cheloneides*, D.C.
[2] *Acacia concinna*, D.C.

heaviest parts, the monarch of the forest is a mango, and there are, near by, great numbers of *Caryota urens*, Linn., showing great variation in the form of the leaflets; some forming a nearly equilateral triangle, others a long narrow wedge; the prevalence of particular forms on certain trees leads one to imagine they are of different species, but this impression disappears on further study. *Pothos scandens*, Linn., in company with a species of *Piper*, is abundant on the stems of trees here, and the coalescence of the stems of *Terminalia tomentosa*, Bedd. and *Lagerstrœmia lanceolata*, Wall., is frequently to be seen. Why should those two species coalesce more frequently than others? It would be interesting to cut through one of the stems and watch the result. When Kumta was 45 miles distant, the first example of *Cymbidium bicolor*, Lindl., was met with, its pendulous flower stalks, about eighteen inches in length, were not fully developed. Here was *Wrightia tomentosa*, R. & S., that has caused such diverse statements by authors regarding the colour and odour of its flowers. In this instance—noted 12 hours after gathering—the corolla was a very pale yellow with a greenish tinge, the lobulate scales at the mouth of the corolla tube were orange-coloured and the odour foetid; when first seen in the forest, the corolla was a nearer approach to pure white. *Osyris Wightiana*, Wall. occurs here; and *Dillenia pentagyna*, Roxb., laden with its small yellow fruit, is abundant, here also is the *Nux-vomica* tree—at this season in the height of its beauty with fresh shining foliage, and bright red or yellow fruit. At 37 miles from the coast, *Ixora coccinea*, Linn. was first observed, and it continued down to the margins of the back waters; its colour varies from pale yellow to deep crimson, and it, with the assistance of *Mussaenda frondosa*, Linn., with its pure white bracts, makes the forest gay. *Dalbergia volubilis*, Roxb., *Jasminum arborescens*, Roxb., *Bassia longifolia*, Linn., *Melastoma malabathricum*, Linn., *Smilax ovalifolia*, Roxb., *Garcinia indica*, Chois., and *Schleichera trijuga*, Willd. were the new features of the forest in that locality.

At that place also occurs the first regular plantation of betel-nut palms met with on this journey. The plantation occupies the higher part of a narrow valley evidently having abundant subsoil water, which at the lower part is utilised for rice fields that are moist in the month of May. The plantation is surrounded by broad and deep trenches which serve as drains to catch surface water and to strengthen the fences. The trees are in lines 8 feet apart, and between each pair of lines there is, alternately, a drain and a ridge, the drains being about 18 inches in depth and the ridges of corre-

sponding height, so that each tree stands on a slope; the distance apart of the trees in the lines is about 5 feet. In this plantation no irrigation is used; and cattle-dung not being available, the chief manure consists of young branches and leaves from the neighbouring forset; such manure had recently been laid down on the surface to a depth of about 9 inches; between the palms cardamoms are grown, pepper vines are trained up the stems, and plantains occupy all odd places. At Sumpkand, 27 miles from the coast, *Gymnema sylvestre*, Br., was found. It was not in flower, so the test of its remarkable property of suspending temporarily the ability to taste sugar was applied; it has been said also to suspend the power of tasting quinine, and one of the servants, who has been gorged with that useful drug for some days, was made happy in the prospect; but it proved fallacious, as far as his and my own experience went; no doubt it did alter the taste of quinine somewhat, but it did not remove its bitterness. This plant is widely distributed on the hill ranges in Western India, but nowhere occurs so abundantly as in the immediate neighbourhood of the district bungalow at Sumpkand, North Kanara. It has not any well-known vernacular name, and its properties were not known to any of the people I met with, who were quite familiar with the properties of *Hemiaesmus indicus*, Br. To fulfil an indent for the dried leaves of G. *sylvestre*, I set about collecting and also made the bungalow peon familiar with it, to facilitate the collection of future supplies. It may be worth noting that the coolies employed to gather the leaves were lads, named Gunpa and Jiwa.

The vegetation here shows indications of a decided increase in moisture. Among Orchids *Rhynchostylis retusa*, Blume., *Cœlogyne bicolor*, Lindl., *Saccolabium Wightianum*, Hook. f., *Cottonia macrostachys*, Wight., *Pholidota imbricata*, Lindl., *Vanda parviflora*, Lindl., and a few others, occur; and of ferns, *Blechnum orientale*, Linn., *Stenoloma chinensis*, Swartz., *Gleichenia linearis*, Burm., *Alsophylla glabra*, Hook., *Lygodium microphyllum*, R. Br., *Pteris pellucida*, Presl., *Adiantum lunulatum*, Burm., *Athyrium filix-fœmina*, Bernh. In shady nooks by the road-side, even at this dry season (May), magnificent groups of those ferns may be seen, but *Gleichenia linearis* (like *Pteris longifolia* in other districts) bears full sunshine with impunity. Here was first met with the one solitary example of *Araliaceæ* in Western India, *viz.*, *Heptapleuron Wallichianum*, C. B. Clarke. It is not "a large glabrous tree" here, but a subscandent shrub. Here was a large Jack-fruit tree with over one hundred of its grand golden-coloured fruits nearly ripe, and near it, three specimens of *Amorphophallus commutatus*, Schott, in flower. The roots of the latter were dug up, labelled,

and carried off to Poona to produce leaves. (Those have grown up and prove to be remarkably similar to the leaves of A. *campanulatus*.) Here is also found *Modecca palmata*, Lam., the only representative of *Passifloreæ* in Western India. I had been searching for this plant for a long time, but no exact *habitat* being available on records, I had not found it hitherto. On the Kumta-Sirsi road, from the 15th to the 30th mile from Kumta, it occurs rarely, some plants being in flower, others in fruit. The fruit at this season is an oblate smooth green hollow sphere, about 1½ inch in width, the seeds scarcely yet beyond the ovular stage. An adjacent shopkeeper informed me that it is called *Iyer balli*, and that the fruit grows the size of the fist, is poisonous, and is used as cattle medicine. The root is greatly swollen and appears to rise above ground, rapidly tapering, and producing one or two stems which had climbed about 6 feet in the largest specimen seen. Three of the roots dug up and carried about eight days have been found to grow freely when planted. A little further on *Premna coriacea*, Clarke, was met with ; in this instance, it was a subscandent shrub. *Turræa villosa*, Benn., and *Saccolobium maculosum* Hook. f., were found soon after ; the latter unfortunately a solitary specimen. At the 25th mile from the coast the road passes over a high open place with sparse forest and outcrops of granite; this is the home of *Phœnix acaulis*, Buch. ; this plant is only *comparatively* stemless, for many examples with stems 5 feet in height may be seen. As the fruit was ripe, several gardens are enriched from its produce, very few palms being more suitable for garden decoration, as it is elegance itself while young. At the 23rd mile from the coast, what appears to be the crest of the Ghauts is reached, and there is a short descent; on the highest point *Ficus Arnottiana*, Miq., was conspicuous, in fresh young foliage of a bright red colour. Its stipules are, in this instance, 2 inches in length, and fall off as soon as the leaves are developed. *Helicteres isora*, Linn., appeared as soon as the descent was commenced, and was soon followed by *Ipomœa vitifolia*, Sweet., which proved much less abundant here than it is 100 miles further north. Soon *Derris scandens*, Benth. became one of the chief ornaments of the road-side; its bright green leaves and rosy flowers were very beautiful in May. *Albizzia stipulata*, Bois., is frequent here, and so is *Blumea myriocephala*, D. C., growing on steep banks, by the roadside. At 20 miles from Kumta, the course of the Bennihalla river was crossed; its greenstone bed was dry and washed clean, and on its banks, the Mango, *Pongamia glabra*, Vent., *Mimusops Elengi*, Linn., and several species of *Ficus*, with a graceful species of *Pandamus* not in flower or fruit. *Homonoia riparia*, Lour., a large grass, and immense plants of *Entada scandens*, Benth., occur in that locality, the latter without good specimens of its enormous legumes, the few collected being

not more than 2 feet in length. In that place *Capparis Heyneana*, Wall., displayed its large fugaceous flowers, in this instance white; but pale blue specimens were collected later. A little further on, Divimana was reached; here, *Chonemorpha macrophylla*, G. Don., was in bloom, its flowers 4½ inches in expanse, pure white when newly opened, but early becoming a pale yellow and of an agreeable odour, the foliage bright green and of strong texture; a desirable plant for a large garden; unfortunately no seed was procurable; an empty follicle, 9 inches in length, showed that the seed had recently escaped. *Naravelia zeylanica*, D. C., and *Ophiorrhiza Harrisonii*, Heyne, are found here in bloom in October, and here, growing on trees, is apparently a species of *Æschynanthus* with leaves much larger than any described in the Flora of British India, but it was not in flower. *Chasalia curviflora*, Thw., with its pretty pink and white wax-like flowers, occurs in the shade rarely; and *Pavetta Brunonis*, Wall., pokes its handsome corymbs of white flowers from every little thicket. Here was an *Asparagus* not in bloom, its cladodes ⅛ inch in breadth and of a very deep shining green which would be a real acquisition in gardens, as such foliage is rare. *Garcinia Cowa*, Roxb., is here a grand tree, with a straight stem, and so is *Holigarna longifolia*, Roxb. In a small stream a species of *Spirogyra* is found; and, on its banks, *Cardanthera pinnatifida*, Benth., *Blechnum orientale*, Linn., *Angiopteris evecta*, Hoffm., and *Alsophila glabra*, Hook. appear to be specially at home here, for the specimens seen were the largest that I have met with. From Divimana the road descends rapidly.. On the slope a species of *Calamus* is widely distributed, and for a space of half a mile on the road, about 15 miles from Kumta, is a very graceful pinnate-leaved short-stemed palm, answering as far as can be seen to the description of *Wallichia caryotoides*, Roxb.; but as that palm is not recorded in the Flora of British India as occurring here, this plant must be kept in view and its flowers and fruit obtained. *Hopea Wightiana*, Wall., abounds here and was carpeting the ground with its fallen flowers; it bears echinate galls which resemble the fruit of an *Artocarpus*. *Myristica attenuata*, Wall. and *Pithocolobium bigeminum*, Benth. are found in ripe fruit, and *Macaranga Roxburghii*, Wight, here attains the size of a medium tree. *Saraca indica*, Linn., apparently wild, is found only once; *Nephellium Longanum*, Camb., and *Cassia Fistula*, Linn., occur and *Garcinia indica*, Choisy, becomes common; *Wagatea spicata*, Dalz., and *Maba nigricans*, Dalz., being seen occasionally At the bottom of the Ghaut, in the bed of a stream, beautiful clumps of *Osmunda regalis*, Linn., were found. The altitude here is very little above

the level of the sea, and the impression that the Royal Fern is only an Alpine plant in India, was dissipated. On banks at the side of the road here, *Naragamia alata*, W. and A., occurs, and in open places, the glorious *Lagerstrœmia flos-reginæ*, Retz. is in full flower. *Artocarpus hirsuta*, Lamk., is common here; while this tree is young its leaves are very variable in form and size, the largest leaves measuring 17 by 8½ inches. On low banks in the tidal creeks, were observed *Calotropis gigantea*, Br., *Asclepias Curassavica*, Linn., *Vitex Negundo*, Linn., *Melastoma malabathricum*, L., and *Eugenia caryophyllæa*, Wight; while growing in the brackish water 18 inches in depth, is *Acrostiohum aureum*, Linn. Now we have arrived at Kumta, where all the good soil is occupied with Cocoanut palms, but occasionally may be seen the Bread-fruit tree and *Suringee*.* As the sea-shore is approached, *Ægiceras majus*, Gærtn., appears in the mud, and *Calophyllum inophyllum*, Linn., becomes more frequent; of the latter some very grand old specimens occur in the shelter of a small hill that protects the harbour. I have not seen noted the means by which cross fertilization is ensured in *Calophyllum inophyllum*. The sepals and petals of some of the flowers completely enclose the stamens, but leave a small aperture through which the stigma is protruded, so that it may receive pollen from another flower As we embark, *Memecylon edule*, Roxb., and *Eugenia caryophyllæa* on the rocks and *Spinifex squarrosus*., Linn., in the sand, are the last plants observed.

COLLEGE OF SCIENCE,
POONA;
*The 17th June 1894.*

G. MARSHALL WOODROW.

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*Synopsis of Practical Notes.*

*Hemidesmus indicus*, Br. (Kanarese *Dudeballi*) abundant between Yacombi and Divimana, North Kanara.

*Gymnema sylvestre*, Br, (not known by any name to people met with) abundant near the district bungalow, Sumpkund, North Kanara.

Cultivation of betel-nuts in North Kanara. Place selected for plantation—narrow valley—with sub-soil water available. No irrigation used, but a perfect system of open drains to remove superfluous water; trees 8 feet by 4 feet apart. Manure—young branches and leaves from forest.

*Modecca palmata, Lam.*, (Kanarese *Iyer balli*) on the Kumta-Sirsi Road, 15 to 30 miles from Kumta.

* Ochrocarpus longifolius, Benth.

# NOTES

OF A

# BOTANICAL TOUR IN TRAVANCORE, ETC.

BY

M. A. LAWSON, M.A.,
GOVERNMENT BOTANIST, MADRAS.

I left Ootacamund on the 14th November 1893, and returned on the 30th December; during this period I travelled over the following ground :—

| | |
|---|---|
| Ootacamund. | Murchiston. |
| Shoranur. | Ayur. |
| Trichur. | Quilon. |
| Cochin. | Trivandrum. |
| Quilon. | Nagercoil. |
| Ayur. | Cape Comorin. |
| Colatoorpooly. | Nagercoil. |
| Rockwood. | Tinnevelly. |
| Poonamudi. | Ootacamund. |

My object in travelling over this large extent of country was to find out the best stations in which to establish trained collectors, rather than to make extensive collections of plants myself.

At Quilon, I met Mr. Bourdillon, Conservator of Forests to the Travancor Government, and travelled with him for over a fortnight. From Mr. Bourdillon I obtained great assistance: he not only knows the country thoroughly well (he practically arranged my tour for me), but he has also a more extensive acquaintance with the trees of his district than any Forest officer I ever met with, with the exception of Sir Dietrich Brandis and Mr. Gamble. Mr. Bourdillon has promised to take people out with him, on tour, for the purpose of collecting plants; but he scouts the idea of establishing centres for native collectors; he says that he has tried this plan several times, and always without success. The men, he has sent, are afraid to go into the jungle by themselves; they stick in the bazaar in some village, and bring back only the commonest weeds. My experience of Tamil collectors is equally unsatisfactory.

I will describe briefly some of the places at which I staid :—

(*a*) *Ayur.*—A small native village, with a good traveller's bungalow, 28 miles distant from Quilon. The general elevation of the surrounding country may be taken at about 100 feet; there are some hills, but none of any great height. It was here that I first came across the *Zanonia indica;* a large huge climber with bunches of clavate fruits, weighing nearly a stone. It was here also that I first made acquaintance with the *Myristica magnifica*, Bedd. It is a tree which prefers swampy ground, and always in high forest; and extends from 1 to 600 feet. Colonel Beddome found it in the hills of Courtallum, so that its range of growth probably extends over some 80 miles of country, north and south. The tree is often fully 100 feet, or more in height. It has no distinct buttresses, so far as I observed; though this is stated by Beddome to be the case. The base of the tree in the more swampy places appears to rot, and the tree is then supported by vast stem-like roots, as is well known to be the case with many of the *Rhizophoreæ*. The roots, which are all on the surface, sprawl along the ground, forming nodules, and even upright loops; rendering the walking under these trees anything but comfortable. In one case at Ayur, I crawled under the main stem of the tree. The wood, I believe, is of little value as timber. The other nutmegs here are the (2) *Myristica attenuata*, a tree from 60 to 80 feet in height, with a small oblong fruit. This grows with *M. magnifica*, but on the drier slopes. (3) *Myristica Canarica*, a tree about the same height as *M. attenuata*, and growing in the same sort of places. (4) *M. Beddomii*, King., grows at elevations of 2,000 feet and upwards.

(*b*) *Coolatoorpooly* is 16 miles from Ayur, and only slightly higher; but there are hills, in many places densely wooded, which rise to the height of 2,000 feet, on which grow many of the west country species of trees, such as *Dysoxylum malabaricum*, called in Cochin, the white Cedar; *Pterospermum rubiginosum*, a tree from 100 to 120 feet in height, and with a wood which is hard and red. *Pterospermum acerifolium* is also common. *Amoora Rohituka* with the flowers on long pedicels was also common; also *Aglaia minutiflora* Var., *Travancorica*. At Coolatoorpooly there is a good traveller's bungalow, and this would form a good place from which to make excursions into the surrounding districts.

(*c*) *Rockwood* is a tea plantation 7 miles from Coolatoorpooly,

and 2,000 feet in height. It is surrounded on all sides with magnificent high forest and would be an admirable centre from which to make excursions.

(*d*) *Poonamudi* and *Murchiston* are tea estates 25 and 28 miles, respectively, from Coolatoorpooly; *Poonamudi* is about 2,500 feet and Murchiston about 2,000 feet. From Poonamudi the hills rise to 4,000 or more feet in height, and in many places are covered with "black impenetrable forests," wholly unexplored by any botanist. Hill tents would be required to explore this part of the country, and some precaution would have to be taken to prevent wild elephants damaging the camp. Wild animals are said to be abundant, such as tigers, bison, and sambhur. From Murchiston, botanical tours might advantageously be made on the lower slopes of the hills, in the direction of Trivandrum.

(*e*) *Quilon* would form a good station for the collector. The backwaters contain a great variety of aquatic plants; and there is a coral reef on which many kinds of marine *algæ* are to be found.

(*f*) *Trivandrum* is not a centre of any importance from a botanical point of view.

(*g*) *Nagercoil* is a big straggling native town, 43 miles to the south of Trivandrum. It is 12 miles from Cape Comorin; and 12 miles from Thadikarama, which lies at the foot of the Ashamboo hills, and where there is a good Forest bungalow. Six miles from Thadikarama, there is a tea plantation, where, I dare say, a collector could be put up; but to explore the mountains properly, tents would be needed.

Ayur, Coolatoorpooly, and Thadikarama have all of them a bad reputation for fever from the end of January to the end of May. The hill stations are said to be healthy all the year round. During December and January, there occur on these hills violent gusts of wind, which are generated on the cold plateau. These gusts last, as a rule, only for a very short time; but they are intensely cold, and are said to be dangerous to persons who are not properly protected from them at nights. I stayed with several planters on the hills, from whom I received much kind hospitality and help; and they would, I am sure, cordially assist any one sent to explore the countries lying around their plantations.